

CLAIMS

- 5 1. A method of associating additional information with a video including a plurality of frames comprising:
- (a) identifying at least one of said frames;
 - (b) providing a descriptive stream separate from said video;
 - 10 (c) including said additional information in said descriptive stream related to said at least one of said frames;
 - (d) providing said video for displaying on a display; and
 - 15 (e) selectively providing said additional information to a viewer approximately the time of said providing said video.
- 20 2. The method of claim 1 wherein said additional information includes at least one of an object index, a textual description, a voice annotation, an image feature, an object link, a URL link, and a Java applet.
- 25 3. The method of claim 1 wherein said identifying is an object within said frame.
- 30 4. The method of claim 1 where said descriptive stream is related to a plurality of said frames.
5. The method of claim 4 wherein said at least one of said frames are in sequential order in said video.

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14. The method of claim 1 wherein an audible signal indicates the availability of said additional information.

15. The method of claim 1 wherein a visual signal indicates the availability of said additional information.

5 16. The method of claim 7 wherein said additional information includes textual based information related to said object.

10 17. The method of claim 7 wherein said additional information includes audible information related to said object.

15 18. The method of claim 7 wherein said additional information includes image features comprising at least one of texture, shape, dominant color, and a motion model related to said object.

20 19. The method of claim 7 wherein said additional information includes links to at least one of other objects and frames within said video.

25 20. The method of claim 7 wherein said additional information includes program instructions related to said object.

30 21. A video system comprising:
 (a) an encoder that includes additional information within a video stream including a video including a plurality of frames, where said additional information is related to at least one of said frames;
 (b) a receiver that receives said video and said additional information, and said receiver decodes said video in the same

manner independently of whether said additional information is provided;

- (c) a display for displaying said video; and
- (d) a trigger mechanism for selectively presenting said additional information to a viewer at approximately the time of presenting said frames to said viewer.

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22. The system of claim 21, further comprising:

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- (a) a transmitter for transmitting said video signal and said additional information; and
- (b) a receiver for receiving said video signal and said additional information.

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23. The system of claim 22 wherein said encoder is at least one of a video camera and a computer.

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24. The system of claim 21 wherein said trigger mechanism is located in a remote control device.

25. The system of claim 21 wherein said additional information is provided by a remote control device.

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26. The method of claim 21 wherein said additional information is related to an object within said frame and includes links to at least one of other objects and frames within said video.

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27. The method of claim 21 wherein said additional information is related to an object within said frame and includes program instructions related to said object.

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28. The method of claim 21 wherein said additional information is related to an object within said frame and includes textual based information related to said object.

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29. The method of claim 21 wherein said additional information is related to an object within said frame and includes audible information related to said object.

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30. The method of claim 21 wherein said additional information is related to an object within said frame and includes image features comprising at least one of texture, shape, dominant color, and a motion model related to said object.

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31. A system for presenting information comprising:

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(a) a unitary file containing an image and additional information associated with said image;

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(b) a selection mechanism that permits the selection of objects in said image for which said additional information is related thereto; and

(c) a presentation mechanism that provides said additional information to a viewer in response to selecting said object.

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32. The system of claim 31 wherein said file includes said image followed by said additional information.

33. The system of claim 32 wherein said image and said additional information are separated by a marker indicating the end of said image.

5 34. The system of claim 33 wherein an image viewer which does not recognize said additional information will display said image properly and recognize said marker as indicating the end of said image.

10 35. The system of claim 34 wherein said image is in a JPEG format.

15 36. The system of claim 31 wherein said additional information is organized in at least two layers comprising:

- (a) a first layer containing information describing the location of objects within said image; and
- 20 (b) a second layer containing additional information regarding said objects within said image, where said first layer contains fewer bytes than said second layer.

25 37. The system of claim 36 wherein said second layer follows said first layer, which in turn follows said image file.

30 38. The system of claim 36 wherein said first layer contains a length identifier describing the length of said first layer.

39. The system of claim 36 wherein said first layer contains a number of objects identifier describing the number of objects identified by said first layer.

5 40. The system of claim 36 wherein said first layer contains a number of data identifier describing the number of data items associated with a particular said object.

10 41. The system of claim 36 wherein said first layer contains a first definition of the outline of an object of said image.

15 42. The system of claim 36 wherein said second layer contains a length identifier describing the length of said second layer.

20 43. The system of claim 36 wherein said second layer contains an array of offsets that identify the start of each data item.

25 44. The system of claim 41 wherein said second layer contains a second definition of the outline of said object of said image, where said second definition more closely approximates the outline of said object than said first definition.

30 45. The system of claim 41 wherein said second layer contains a second definition of the outline of said object of said image, where said second definition contains more bytes than said first definition.

35 46. The system of claim 36 wherein said second layer includes sound data related to said object.

47. The system of claim 36 wherein said second layer includes HTML meta tags related to said object.

48. The system of claim 36 wherein said second
5 layer includes textual annotations related to said object.

49. The system of claim 36 wherein said second
10 layer includes an HTML page to be rendered.

50. The system of claim 36 wherein said second layer includes a Java Applet related to said object.

51. The system of claim 36 wherein said second
15 layer includes a color histogram.

52. The system of claim 36 wherein said second layer includes data related to the conditions under which said image was created including at least one of
20 lighting, camera settings, and time of acquisition.

53. The system of claim 36 wherein said second layer includes data related to information for reproducing said image including at least one of cropping
25 information, paper type, camera settings, and image production settings.

54. The system of claim 36 wherein said second layer includes another image to be superimposed upon said
30 image.

55. The system of claim 36 wherein said second layer includes data regarding the author of said image.

5 57. The system of claim 56 said copyright data
is encoded.

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62. The method of claim 61 wherein an image viewer which does not recognize said additional information will display said image properly and

recognize said marker as indicating the end of said image.

63. The method of claim 62 wherein said image
5 is in a JPEG format.

64. The method of claim 59 wherein said
additional information is organized in at least two
layers comprising a first layer containing information
10 describing the location of objects within said image and
a second layer containing additional information
regarding said objects within said image, where said
first layer contains fewer bytes than said second layer.

65. The method of claim 64 wherein said second
15 layer follows said first layer, which in turn follows
said image file.

66. The method of claim 64 wherein said first
20 layer contains a length identifier describing the length
of said first layer.

67. The method of claim 64 wherein said first
layer contains a number of objects identifier describing
25 the number of objects identified by said first layer.

68. The method of claim 64 wherein said first
layer contains a number of data identifier describing the
number of data items associated with a particular said
30 object.

69. The method of claim 64 wherein said first
layer contains a first definition of the outline of an
object of said image.

70. The method of claim 64 wherein said second layer contains a length identifier describing the length of said second layer.

5 71. The method of claim 64 wherein said second layer contains an array of offsets that identify the start of each data item.

10 72. The method of claim 69 wherein said second layer contains a second definition of the outline of said object of said image, where said second definition more closely approximates the outline of said object than said first definition.

15 73. The method of claim 69 wherein said second layer contains a second definition of the outline of said object of said image, where said second definition contains more bytes than said first definition.

20 74. The method of claim 64 wherein said second layer includes sound data related to said object.

25 75. The method of claim 64 wherein said second layer includes HTML meta tags related to said object.

 76. The method of claim 64 wherein said second layer includes textual annotations related to said object.

30 77. The method of claim 64 wherein said second layer includes an HTML page to be rendered.

 78. The method of claim 64 wherein said second layer includes a Java Applet related to said object.

79. The method of claim 64 wherein said second layer includes a color histogram.

5 80. The method of claim 64 wherein said second layer includes data related to the conditions under which said image was created including at least one of lighting, camera settings, and time of acquisition.

10 81. The method of claim 64 wherein said second layer includes data related to information for reproducing said image including at least one of cropping information, paper type, camera settings, and image production settings.

15 82. The method of claim 64 wherein said second layer includes another image to be superimposed upon said image.

20 83. The method of claim 64 wherein said second layer includes data regarding the author of said image.

25 84. The method of claim 64 wherein said second layer includes copyright data regarding the copyright of said image.

85. The method of claim 64 said copyright data is encoded.

30 86. The method of claim 64 wherein said second layer includes information regarding how said image should be viewed.

87. A method for creating an image file comprising:

35 (a) providing an image;

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94. The method of claim 92 wherein said first layer contains a length identifier describing the length of said first layer.

5 95. The method of claim 92 wherein said first layer contains a number of objects identifier describing the number of objects identified by said first layer.

10 96. The method of claim 92 wherein said first layer contains a number of data identifier describing the number of data items associated with a particular said object.

15 97. The method of claim 92 wherein said first layer contains a first definition of the outline of an object of said image.

20 98. The method of claim 92 wherein said second layer contains a length identifier describing the length of said second layer.

25 99. The method of claim 92 wherein said second layer contains an array of offsets that identify the start of each data item.

30 100. The method of claim 97 wherein said second layer contains a second definition of the outline of said object of said image, where said second definition more closely approximates the outline of said object than said first definition.

35 101. The method of claim 97 wherein said second layer contains a second definition of the outline of said object of said image, where said second definition contains more bytes than said first definition.

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117. The method of claim 116 wherein said request is in response to a user selecting an object within said image.